Current session 05/12/2003

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Last connection: 23/11/03 22*53*08

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- French Patent Applications Fulltext file, see INFO FRFULL
..FILE / ..INFO / ..GUIDE
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Query/Command : file cl esq3

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QUESTEL      - Time in minutes :   0,86
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Estimated total session cost                :     0.80 USD

Selected file: INSPEC

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Selected file: JAPIO

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 patent applications from December 1976 thru AUGUST 2003 (PD=2003-08).
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Selected file: DWPX

 Welcome to Derwent World Patent Index, (c) Derwent Information Ltd
 UP (basic), UE(equiv), UA (poly), UB (chem) : updates thru 2003-78
 US Patent Applications are in 11 digit format: USYYYYNNNNNNN/pn
 New: Derwent Manual Code Definition Look-up File - see INFO DWPIMC
 Last database update : 2003/12/05 (YYYY/MM/DD)

Cluster : ESQ3
Databases : INSPEC, JAPIO, DWPX

Search statement   1
```

Query/Command : modulation 2d depth

```
INSPEC                  2095
JAPIO                     56
DWPX                     564
```

**** SS 1 : Results 2715**

```
Search statement   2
```

Query/Command : raman

INSPEC	72590
JAPIO	1423
DWPX	2535

**** SS 2 : Results 76548**

```
Search statement   3
```

Query/Command : 1 and 2

INSPEC	13
JAPIO	0
DWPX	2

**** SS 3 : Results 15**

```
Search statement   4
```

Query/Command : prt 1-15 ti

---

1 / 15 INSPEC (1 / 13) - ©INSPEC

TI - Enhancement of double Rayleigh scattering by pump intensity noise in fiber **Raman** amplifiers.

---

2 / 15 INSPEC (2 / 13) - ©INSPEC

TI - 4*repetition rate multiplication and adiabatic **Raman** compression of 20-GHz optical pulses in a single fiber.

---

3 / 15 INSPEC (3 / 13) - ©INSPEC

TI - Homoclinic chaos in vacuum Rabi oscillations of moving two-level atoms.

---

4 / 15 INSPEC (4 / 13) - ©INSPEC

TI - Phase-sensitive tests of pairing symmetry in cuprate superconductors.

5 / 15 INSPEC (5 / 13) - ©INSPEC

TI - Structural defect control and photosensitivity in reactively sputtered germanosilicate glass films.

6 / 15 INSPEC (6 / 13) - ©INSPEC

TI - Laser induced periodic structures in porous silicon.

7 / 15 INSPEC (7 / 13) - ©INSPEC

TI - Amplitude modulated harmonic mode-locking characteristics of Er3+ doped fiber ring laser.

8 / 15 INSPEC (8 / 13) - ©INSPEC

TI - Fabrication and structural and optical properties of amorphous Si/SiO2 superlattices on (100)Si.

9 / 15 INSPEC (9 / 13) - ©INSPEC

TI - High-order diffraction in photorefractive SBN:Ce due to non-sinusoidal gratings formed by beams of comparable intensity.

10 / 15 INSPEC (10 / 13) - ©INSPEC

TI - The effect of oxygen on the structure of annealed W/C multilayer thin films.

11 / 15 INSPEC (11 / 13) - ©INSPEC

TI - Material parameters determination in barium titanate using a laser probe technique.

12 / 15 INSPEC (12 / 13) - ©INSPEC

TI - Optical testing of ultrasonic phase gratings using a Fresnel diffraction method.

13 / 15 INSPEC (13 / 13) - ©INSPEC

TI - Modulation transfer function of phase holograms.

14 / 15 DWPX (1 / 2) - ©Thomson Derwent - image

TI - Optical signal remodulation method for optical communication system, involves combining derived clock signal and original signal, and selecting combined signal with respect to pump wavelength of **Raman** pump

---

15 / 15 DWPX (2 / 2) - ©Thomson Derwent - image

TI - Two wavelength WDM analog CATV transmission apparatus, has optical fiber to which dither having specific **modulation depth** and frequency is applied to reduce cross talk

Query/Command : prt 15 fu

---

15 / 15 DWPX (2 / 2) - ©Thomson Derwent - image

AN - 2001-181246 [18]

XP - N2001-129186

TI - Two wavelength WDM analog CATV transmission apparatus, has optical fiber to which dither having specific **modulation depth** and frequency is applied to reduce cross talk

DC - W02

PA - (LUCE) LUCENT TECHNOLOGIES INC

IN - SRIVASTAVA AK; WOOD TH; ZYSKIND JL

NP - 1

NC - 1

PN - US6151145 A 20001121 DW2001-18 H04J-014/02 15p *
AP: 1997US-P037735 19970213; 1998US-0010617 19980122

PR - 1997US-P037735 19970213; 1998US-0010617 19980122

IC - H04J-014/02

AB - US6151145 A
NOVELTY - A dither (38) having optical **modulation depth** of approximately 10% and frequency of 2GHz, is applied to an optical fiber transmitter end to reduce cross-talk in the wavelength multiplexed output signal at the receiver end of the optical fiber. The optical fiber has polarization mode dispersion (PMD) and polarization dependent loss (PDL) less than 1dB.
DETAILED DESCRIPTION - Fiber optic sources (12,14) produce output signals of different wavelengths whose difference is set to be 2.2 nm. Modulators (16,18) modulate the output signals of optical sources, which are combined to produce wavelength division multiplexed (WDM) output. An INDEPENDENT CLAIM is also included for a method of wavelength division multiplexed transmission over an optical fiber.
USE - For video signal transmitted from satellites, television stations in two wavelength WDM analog CATV transmission.
ADVANTAGE - Reduces cross-talk between channels and stimulated **Raman** scattering (SRS) degradation by using wavelength spacing of approximately 2.2 nm
DESCRIPTION OF DRAWING(S) - The figure shows the WDM radio transmission system.
Fiber optic sources 12,14
Modulators 16,18
Dither 38(Dwg.1/9)

MC - EPI: W02-C04B1A W02-C04B4B W02-F03A3 W02-F03A5 W02-K04

UP - 2001-18

UP4 - 2001-04

Query/Command : nbr /aun flannery da

<QOerror code='2' scode='1' num='6'><QOerrormsg>AUN</QOerrormsg><QOerrormsg>You have

Query/Command : nbr /aun flannery da

1	32	FLANNERY BP
2	6	FLANNERY C
3	2	FLANNERY CC
4	22	FLANNERY CM
5	13	FLANNERY D
6	1	FLANNERY DJ
7	34	FLANNERY DL
8	3	FLANNERY EJ
9	2	FLANNERY GA
10	23	FLANNERY J
11	3	FLANNERY JB
12	2	FLANNERY JB JR
13	3	FLANNERY JE
14	1	FLANNERY JM
15	1	FLANNERY JT

```
Some: numbers / Continue: Y / None: N
```

Query/Command : 5

```
** SS   4 : Results       13

Continue: Y / N
```

Query/Command : prt 1-13 ti

---

1 / 13 INSPEC (1 / 13) - ©INSPEC

TI - The application of the NeXus data format to ISIS muon data.

---

2 / 13 INSPEC (2 / 13) - ©INSPEC

TI - Fiber-optic chemical sensing with Langmuir-Blodgett overlay waveguides.

---

3 / 13 INSPEC (3 / 13) - ©INSPEC

TI - Single mode fibre optic chemical sensor using Langmuir-Blodgett waveguide overlays.

---

4 / 13 INSPEC (4 / 13) - ©INSPEC

TI - Chemical sensing using Langmuir-Blodgett waveguide overlays on single mode optical fibers.

---

5 / 13 INSPEC (5 / 13) - ©INSPEC

TI - Fiber optic pH sensors using thin-film Langmuir-Blodgett overlay waveguides on single-mode optical fibers.

---

6 / 13 INSPEC (6 / 13) - ©INSPEC

TI - Ultra fast optical processing using semiconductor amplifiers.

---

7 / 13 INSPEC (7 / 13) - ©INSPEC

TI - Ultra-high-speed OTDM networks using semiconductor amplifier-based processing nodes.

---

8 / 13 INSPEC (8 / 13) - ©INSPEC

TI - Practical high speed optical processing using GaInAsP amplifiers.

---

9 / 13 INSPEC (9 / 13) - ©INSPEC

TI - Application of binary phase-only filters to machine vision.

---

10 / 13 INSPEC (10 / 13) - ©INSPEC

TI - New formulations for discrete-valued correlation filters.

---

11 / 13 INSPEC (11 / 13) - ©INSPEC

TI - Optical threshold logic devices and design for agile phased-array beamsteering.

---

12 / 13 INSPEC (12 / 13) - ©INSPEC

TI - Characterization of improved binary phase-only filters in a real-time coherent optical correlation system.

---

13 / 13 INSPEC (13 / 13) - ©INSPEC

TI - Performance of binary phase-only correlation on machine vision imagery.

Query/Command : nbr /aun flintham ba

<QOerror code='2' scode='1' num='6'><QOerrormsg>AUN</QOerrormsg><QOerrormsg>You have

Query/Command : nbr /aun flintham ba

1	1	FLINTA JE
2	1	FLINTER D
3	1	FLINTER S
4	1	FLINTERMAN M
5	4	FLINTHAM B
6	4	FLINTHAM M
7	1	FLINTHAM T
8	5	FLINTHAM TJM
9	1	FLINTOFF B
10	3	FLINTOFF BC
11	1	FLINTOFF I
12	1	FLINTOFF J
13	19	FLINTOFF JF
14	2	FLINTOFF JG
15	2	FLINTOFF P

Some: numbers / Continue: Y / None: N

Query/Command : 5

** SS 5 : Results 4

Continue: Y / N

Query/Command : prt 1-4 ti

---

1 / 4 INSPEC (1 / 4) - ©INSPEC

TI - High speed pump upgrade in networked DWDM systems.

---

2 / 4 INSPEC (2 / 4) - ©INSPEC

TI - Er3+ doped fibre amplifier temperature characteristics in extended and conventional band regions with gain control compensation.

---

3 / 4 INSPEC (3 / 4) - ©INSPEC

TI - Gain control and transient suppression in long wavelength band EDFA modules.

---

4 / 4 INSPEC (4 / 4) - ©INSPEC

TI - Receptacle and fibre-pigtailed coaxial 1300 nm laser sources for local loop and LAN applications.

Query/Command : raman 1w gain

INSPEC	762
JAPIO	47
DWPX	122

**** SS 6 : Results 931**

```
Search statement    7
```

Query/Command : pump??? 2d power

```
  INSPEC                10385
  JAPIO                  1800
  DWPX                   6395
```

**** SS 7 : Results 18580**

```
Search statement    8
```

Query/Command : his

```
  Databases : INSPEC, JAPIO, DWPX

    SS  Results
        INSPEC              2095
        JAPIO                 56
        DWPX                 564
      1       2715  MODULATION 2D DEPTH
        INSPEC             72590
        JAPIO               1423
        DWPX                2535
      2      76548  RAMAN
        INSPEC                13
        JAPIO                  0
        DWPX                   2
      3         15  1 AND   2
      4         13  ..INDEX
        INSPEC       FLANNERY D

      5          4  ..INDEX
        INSPEC       FLINTHAM B


        INSPEC               762
        JAPIO                 47
        DWPX                 122
      6        931  RAMAN 1W GAIN
        INSPEC             10385
        JAPIO               1800
        DWPX                6395
      7      18580  PUMP??? 2D POWER

  Search statement    8
```

Query/Command : 6 and 7

```
  INSPEC                   87
  JAPIO                     2
  DWPX                     17
```

**** SS 8 : Results 106**

```
Search statement   9
```

Query/Command : 1 and 8

```
  INSPEC                   0
  JAPIO                    0
  DWPX                     0

  ** SS   9 : Results       0

  Search statement  10
```

Query/Command : gain 2d profile

```
  INSPEC                 765
  JAPIO                   25
  DWPX                   108
```

**** SS 10 : Results 898**

```
Search statement  11
```

Query/Command : his

```
  Databases : INSPEC, JAPIO, DWPX

    SS  Results
        INSPEC              2095
        JAPIO                 56
        DWPX                 564
     1       2715  MODULATION 2D DEPTH
        INSPEC             72590
        JAPIO               1423
        DWPX                2535
     2      76548  RAMAN
        INSPEC                13
        JAPIO                  0
        DWPX                   2
     3         15  1 AND   2
     4         13  ..INDEX
        INSPEC       FLANNERY D

     5          4  ..INDEX
        INSPEC       FLINTHAM B


        INSPEC               762
        JAPIO                 47
        DWPX                 122
     6        931  RAMAN 1W GAIN
        INSPEC             10385
        JAPIO               1800
        DWPX                6395
     7      18580  PUMP??? 2D POWER
        INSPEC                87
        JAPIO                  2
        DWPX                  17
```

```
      8        106   6 AND    7
        INSPEC                  0
        JAPIO                   0
        DWPX                    0
      9          0   1 AND    8
        INSPEC                765
        JAPIO                  25
        DWPX                  108

     10        898   GAIN   2D PROFILE

  Search statement   11
```

Query/Command : 8 and 10

```
INSPEC                    4
JAPIO                     0
DWPX                      2
```

**** SS 11 : Results 6**

```
Search statement   12
```

Query/Command : prt 1-6 fu

---

1 / 6 INSPEC (1 / 4) - ©INSPEC

AN - 7581719

ABN - A2003-10-4280S-056; B2003-05-6260M-129

TI - Effect of localized loss on distributed fiber Raman amplifiers.

AU - Seung Kwan Kim; Sun Hyok Chang; Jin Soo Han; Moo Jung Chu

OS - Opt. Commun. Dept.; ETRI; Daejon; South Korea

SO - Optical Fiber Communications Conference. (OFC). Postconference Technical Digest (IEEE Cat. No.02CH37339), Pt. vol.1, pp. 639-640 vol.1, Published: Washington, DC, USA, 2002, 2 vol.791+138 pp.

PU - Opt Soc. America

CP - USA

DT - PA (Conference Paper)

LA - English

NU - ISBN 1557527016

PY - 2002

CONF - Optical Fiber Communications Conference. (OFC). Postconference Technical Digest (IEEE Cat. No.02CH37339), Anaheim, CA, USA, 17-22 March 2002, Sponsored by: IEEE/Commun. Soc., IEEE/Lasers & Electro-Opt. Soc., Opt. Soc. America

AB - The effect of localized loss in fiber transmission line on DFRA has been examined using computer simulation based on the measured **Raman gain** coefficient. The output power level of DFRA strongly depended not only on the position of localized loss but also on the loss level. The impact was most serious

when the loss point was close to the signal output side in OLA site. Therefore, it is necessary to measure OTDR trace of the transmission line to figure out the loss distribution before DFRA design or deployment. However, the **Raman gain profile** of DFRA can be made robust against loss change simply by balancing the C/L-band output power as long as the localized loss is outside the effective length of pump. This fact provides DFRA with design flexibility and allows the use of a fixed gain flattening filter. (3 Ref.)

IT - optical fibre amplifiers; optical fibre communication; optical fibre losses; optical fibre testing; optical time-domain reflectometry; Raman lasers; stimulated Raman scattering; wavelength division multiplexing

ST - fiber transmission line; measured Raman gain coefficient; output power level; localized loss; loss level; loss point; signal output side; distributed fiber Raman amplifiers; OTDR trace; loss distribution; Raman gain profile; C/L band output power; effective pump length; fixed gain flattening filter

TC - PR (Practical); XP (Experimental)

CC - A4280S Optical communications devices;
A7830L Infrared and Raman spectra in disordered solids;
A4281C Optical fibre testing and measurement of fibre parameters;
A0760H Optical refractometry and reflectometry;
A4281D Optical propagation, dispersion and attenuation in fibres;
A4255N Fibre lasers and amplifiers;
A4265C Stimulated Raman scattering and spectra; CARS; stimulated Brillouin and stimulated Rayleigh scattering and spectra;
A4230Q Optical communications;
B6260M;
B7320P Optical variables measurement;
B4125 Fibre optics;
B4320F Fibre lasers and amplifiers

---

2 / 6 INSPEC (2 / 4) - ©INSPEC

AN - 7568389

ABN - A2003-09-4255N-014; B2003-04-4320F-039

TI - Automatic **pump power** adjustment for gain-flattened multi-wavelength pumped Raman amplifier.

AU - Sobe M; Yano Y

OS - Opt. Network Operations Unit; NEC Corp.; Kawasaki; Japan

SO - Optical Fiber Communications Conference. (OFC). Postconference Technical Digest (IEEE Cat. No.02CH37339), Pt. vol.1, pp. 63-65 vol.1, Published: Washington, DC, USA, 2002, 2 vol.791+138 pp.

PU - Opt Soc. America

CP - USA

DT - PA (Conference Paper)

LA - English

NU - ISBN 1557527016

PY - 2002

CONF - Optical Fiber Communications Conference. (OFC). Postconference Technical Digest (IEEE Cat. No.02CH37339), Anaheim, CA, USA, 17-22 March 2002, Sponsored by: IEEE/Commun. Soc., IEEE/Lasers & Electro-Opt. Soc., Opt. Soc. America

AB - We proposed **Raman gain** slope measurement method by measuring noise power originated from **Raman gain**, and **pump power** adjustment to flatten the gain on various transmission lines by using measured **Raman gain** slope. We also proposed the technique to vary average **gain** with flattened **profile**. Using the techniques, **Raman gain profile** could be automatically controlled at various average gains according to the characteristics of fibers and the amount of plant loss, without trial and error, as well as without probe signals. As a result, the DAR has come to be free from the troublesome trial and error adjustment onsite, even on various installation conditions. (7 Ref.)

IT - optical communication equipment; optical fibre amplifiers; optical fibre losses; optical pumping; Raman lasers; stimulated Raman scattering; wavelength division multiplexing

ST - automatic pump power adjustment; gain-flattened multi-wavelength pumped Raman amplifier; Raman gain slope measurement; noise power measurement; pump power adjustment; Raman gain; Raman gain slope; transmission lines; average gain; flattened profile; average gains; error adjustment; installation conditions

TC - PR (Practical); XP (Experimental)

CC - A4255N Fibre lasers and amplifiers;
A7830L Infrared and Raman spectra in disordered solids;
A4281D Optical propagation, dispersion and attenuation in fibres;
A4280S Optical communications devices;
A4265C Stimulated Raman scattering and spectra; CARS; stimulated Brillouin and stimulated Rayleigh scattering and spectra;
B4320F Fibre lasers and amplifiers;
B4125 Fibre optics;
B6260C;
B6260M;
B4340 Nonlinear optics and devices

---

3 / 6 INSPEC (3 / 4) - ©INSPEC

AN - 6976589

ABN - B2001-08-4320F-021

TI - Broadband Raman amplifier for WDM.

AU - Emori Y; Namiki S

OS - Fitel Photonics Lab.; Furukawa Electr. Co. Ltd.; Ichihara; Japan

SO - IEICE Transactions on Communications, vol.E84-B, no.5, pp. 1219-1223, May 2001

PU - Inst. Electron. Inf. & Commun. Eng

CP - Japan

DT - J (Journal Paper)

LA - English

JC - ITCMEZ

NU - ISSN 0916-8516

PY - 2001

SI - 0916-8516(200105)E84B:5L.1219:BRA;1-N

AB - We have developed the design procedure of multi-wavelength pumped Raman amplifiers, introducing superposition rule and account for pump-to-pump energy transfer. It is summarized with respect to the **pumping** wavelength and **power** allocation. The comparisons between simulated and experimental results are presented. The fundamentals of Raman amplifier are reviewed and **Raman gain** spectra measured for different fibers are presented and the difference among the spectra is discussed. The way to determine the pumping wavelength allocation is described by introducing the superposition method. By means of this design method, some optimized design examples are presented, where the peak levels of **Raman gain** are fixed to 10 dB for the wavelength range from 1525 nm to 1615 nm (C- plus L-band) in all cases. From these results, it is confirmed that better gain flatness can be obtained by using the larger number of pumps. The article also explains how the pump-to-pump energy transfer changes the **gain profile** by experimental and simulated results. The use of simulation modeling to perform precise numerical simulation is also presented. The design procedure can be simplified: (1) one determines pump wavelengths with which a desired composite **Raman gain** can be obtained by adding in logarithmic scale individual **Raman gain** spectra shifted by the respective wavelength differences with adequate weight factors; and (2), one predicts how much power should be launched in order to realize the weight factors through precise numerical simulations. The superposition rule and the effect of pump-to-pump energy transfer is verified by comparing a measured **Raman gain** with a superposed one. The agreement of two gain profiles shows that the multi-wavelength pumped **Raman gain profile** contains only the individual gain profiles created by the respective pump wavelengths. (20 Ref.)

IT - optical fibre amplifiers; optical pumping; Raman lasers; Raman spectra; stimulated Raman scattering; wavelength division multiplexing

ST - broadband Raman amplifier; WDM; multi-wavelength pumped Raman amplifiers; superposition rule; pump-to-pump energy transfer; pumping wavelength; power allocation; Raman gain spectra measurement; pumping wavelength allocation; superposition method; wavelength; L-band; C-band; gain flatness; gain profile; simulated results; simulation modeling; numerical simulation; Raman gain spectra; weight factors; multi-wavelength pumped Raman gain profile; 1525 to 1615 nm

TC - TM (Theoretical/Mathematical); XP (Experimental)

CC - B4320F Fibre lasers and amplifiers;
B6260M

NM - wavelength 1.525E-06 to 1.615E-06 m

4 / 6 INSPEC (4 / 4) - ©INSPEC

AN - 6963267

ABN - B2001-08-6260C-011

TI - Broadband Raman amplifier for WDM.

AU - Emori Y; Namiki S

OS - Fitel Photonics Lab.; Furukawa Electr. Co. Ltd.; Ichihara; Japan

SO - IEICE Transactions on Electronics, vol.E84-C, no.5, pp. 593-597, May 2001

PU - Inst. Electron. Inf. & Commun. Eng

CP - Japan

DT - J (Journal Paper)

LA - English

JC - IELEEJ

NU - ISSN 0916-8524

PY - 2001

SI - 0916-8524(200105)E84C:5L.593:BRA;1-Y

AB - We developed a design procedure for multi-wavelength pumped Raman amplifiers, using the superposition rule and accounting for pump-to-pump energy transfer. It is summarized with respect to **pump** wavelength and **power** allocation. Comparisons between simulated and experimental results are presented. We review Raman amplifier fundamentals, measured **Raman gain** spectra for various fibers are presented and differences between the spectra are discussed. We then determine pump wavelength allocation using the superposition method. Optimized design examples are presented, where peak **Raman gain** levels are fixed to 10 dB for a 1525 to 1615 nm wavelength range (C- plus L-band). From these results, it is found that better gain flatness can be obtained by using a larger number of pumps. We then explain how pump-to-pump energy transfer changes the **gain profile** by experimental and simulated results. From this discussion, the design procedure can be simplified: (1) pump wavelengths with which desired composite **Raman gain** can be obtained are found by adding in logarithmic scale individual **Raman gain** spectra shifted by the respective wavelength differences with adequate weight factors; (2) the power to be launched in order to realize the weight factors through precise numerical simulations is predicted. We verify the superposition rule and pump-to-pump energy transfer by comparing measured **Raman gain** with a superposed gain. The agreement of the gain profiles shows that the multi-wavelength pumped **Raman gain profile** contains only the individual gain profiles created by the respective pump wavelengths. (20 Ref.)

IT - numerical analysis; optical design techniques; optical fibre amplifiers; optical pumping; optical repeaters; Raman spectra; wavelength division multiplexing

ST - broadband Raman amplifier; WDM; multi-wavelength pumped Raman amplifiers; superposition rule; pump-to-pump energy transfer; pump wavelength; pump power allocation; Raman amplifier; Raman gain spectra; fibers; pump wavelength allocation; superposition method; optimized design; peak Raman gain; wavelength range; gain flatness; gain profile; simulation; design procedure;

composite Raman gain; logarithmic scale individual Raman gain spectra; wavelength difference; weight factors; launched power; numerical simulation; Raman gain; superposed gain; gain profiles; multi-wavelength pumped Raman gain profile; 10 dB; 1525 to 1615 nm

TC - PR (Practical); TM (Theoretical/Mathematical); XP (Experimental)

CC - B6260C;
B6260M;
B0290Z Other numerical methods;
B4320F Fibre lasers and amplifiers

NM - gain 1.0E+01 dB; wavelength 1.525E-06 to 1.615E-06 m

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5 / 6 DWPX (1 / 2) - ©Thomson Derwent - image

AN - 2002-339139 [37]

XP - N2002-266712

TI - Optical fiber **Raman gain** pumping system compensates for gain changes or gain tilt by altering power and wavelengths of primary pump or secondary seed radiation wavelengths

DC - V08 W02

PA - (CLEM/) CLEMENTS W
(KARP/) KARPOV V
(PAPE/) PAPERNYL S
(MPBT-) MPB TECHNOLOGIES INC

IN - CLEMENTS W; KARPOV V; PAPERNYL S; PAPERNYI S

NP - 5

NC - 97

PN - WO200205461 A2 20020117 DW2002-37 H04B-010/17 Eng 36p *
AP: 2001WO-CA01100 20010706
DSNW: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
DSRW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

US20020015220 A1 20020207 DW2002-37 H01S-003/00
AP: 2000US-P217104 20000710; 2001US-0899544 20010706

AU200175629 A 20020121 DW2002-38 H04B-010/17
FD: Based on WO200205461
AP: 2001AU-0075629 20010706

US6480326 B2 20021112 DW2002-78 H01S-003/00
AP: 2000US-P217104 20000710; 2001US-0899544 20010706

EP1302006 A2 20030416 DW2003-28 H04B-010/17 Eng
FD: Based on WO200205461
AP: 2001EP-0953085 20010706; 2001WO-CA01100 20010706
DSR: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

PR - 2000US-P217104 20000710; 2001US-0899544 20010706

IC - H01S-003/00 H04B-010/17 H01S-003/30

AB - WO200205461 A
NOVELTY - System comprises primary tuneable pump sources having m Raman shifts shorter wavelengths than those needed to directly produce distributed **Raman gain** for the signal wavelengths. Lower energy is provided at secondary seed wavelengths and the energy is coupled into the transmission fiber by optical circulators. The primary pump sources comprise a Raman fiber laser operating at different wavelengths or polarization or wavelength-multiplexed laser diodes of equal wavelength. The power and wavelengths of the primary pump or secondary seed radiation wavelengths are selectively altered to dynamically control **Raman gain** or the **gain** spectral **profile** to compensate for gain changes or gain tilt due to changes in the powers or wavelengths of the transmitted signal channels.
DETAILED DESCRIPTION - Amplified spontaneous Raman scattered radiation originating in the fiber due to the presence of high power at a wavelength one Raman shift below the particular seed wavelength is returned into the fiber by a reflector to provide energy at the secondary seed wavelengths. There are INDEPENDENT CLAIMS for (1) a system for applying dynamic control of the magnitude or spectral profile of the distributed **Raman gain** at or near a signal launch terminal of an optical fiber telecommunications span, (2) a method of pumping a transmission fiber of an optical fiber telecommunications span to produce distributed **Raman gain**, (3) a method of applying dynamic control of the magnitude or spectral profile of the distributed **Raman gain** at or near a signal launch terminal of an optical fiber telecommunications span.
USE - System is for pumping the transmission fiber of an optical fiber telecommunication span to produce distributed **Raman gain** in the fiber and amplify the signals transmitted along the span.
DESCRIPTION OF DRAWING(S) - The figure shows a graph of evolution of the power at the primary pump and the two secondary seed source wavelengths versus distance from the receiving or repeater terminal. (Dwg.4/8)

MC - EPI: V08-A04X W02-C04A5

UP - 2002-37

UP4 - 2002-06

UE - 2002-37; 2002-38; 2002-78; 2003-28

UE4 - 2002-06; 2002-12; 2003-05

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6 / 6 DWPX (2 / 2) - ©Thomson Derwent - image

AN - 2001-024713 [03]

XP - N2001-019312

TI - Wide bandwidth Raman amplifier for optical communication, provides **pump power** at different wavelength spaced apart from one another by non-uniform

amounts so that **Raman gain profile** is generated in optical fiber

DC - V07 W02

PA - (TYCO-) TYCO SUBMARINE SYSTEMS LTD
(TYCO-) TYCO TELECOM US INC

IN - KIDORF HD; KIDORF H

NP - 3

NC - 28

PN - WO200065698 A1 20001102 DW2001-03 H01S-003/30 Eng 19p *
AP: 2000WO-US11241 20000427
DSNW: CA JP
DSRW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

EP1092249 A1 20010418 DW2001-23 H01S-003/30 Eng
FD: Based on WO200065698
AP: 2000EP-0928429 20000427; 2000WO-US11241 20000427
DSR: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

US6486466 B1 20021126 DW2002-81 G01B-009/10
AP: 1999US-0301436 19990428

PR - 1999US-0301436 19990428

IC - G01B-009/10 H01S-003/30 H01S-003/00

AB - WO200065698 A
NOVELTY - Amplifier includes an optical fiber (30) and optical pump unit (35) which has three pump sources, which provide **pump power** at different pump wavelength and are spaced apart by non-uniform distances so that **Raman gain profile** is generated in optical fiber. An optical coupler couples the **pump power** to optical fiber for transmitting optical signal.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for method of generating prescribed **Raman gain profile**.
USE - For optical communication system.
ADVANTAGE - Prevents pump and signal wavelengths from overlapping.
DESCRIPTION OF DRAWING(S) - Figure shows alternative embodiment of Raman amplifier according to present invention.
Optical fiber 30
Optical pump unit 35(Dwg.9/9)

MC - EPI: V07-K01C2 W02-C04B4B W02-K04

UP - 2001-03

UE - 2001-23; 2002-81

UE4 - 2001-04; 2002-12

Query/Command : his

```
Databases : INSPEC, JAPIO, DWPX

  SS  Results
      INSPEC            2095
      JAPIO               56
      DWPX               564
```

```
    1      2715  MODULATION 2D DEPTH
      INSPEC            72590
      JAPIO              1423
      DWPX               2535
    2     76548  RAMAN
      INSPEC               13
      JAPIO                 0
      DWPX                  2
    3        15  1 AND   2
    4        13  ..INDEX
      INSPEC       FLANNERY D

    5         4  ..INDEX
      INSPEC       FLINTHAM B


      INSPEC              762
      JAPIO                47
      DWPX                122
    6       931  RAMAN 1W GAIN
      INSPEC            10385
      JAPIO              1800
      DWPX               6395
    7     18580  PUMP??? 2D POWER
      INSPEC               87
      JAPIO                 2
      DWPX                 17
    8       106  6 AND   7
      INSPEC                0
      JAPIO                 0
      DWPX                  0
    9         0  1 AND   8
      INSPEC              765
      JAPIO                25
      DWPX                108

   10       898  GAIN  2D PROFILE
      INSPEC                4
      JAPIO                 0
      DWPX                  2
   11         6  8 AND  10

Search statement  12
```

Query/Command : stop hold

```
Session finished: 05 DEC 2003 Time 18:10:17

INSPEC       - Time in minutes :   8,56
The cost estimation below is based on Questel's
standard price list
                             Estimated cost :   12.84 USD
Records displayed and billed   :     4
                             Estimated cost :   10.40 USD
Cost estimated for the last database search :   23.24 USD
Estimated total session cost                :   24.04 USD

JAPIO        - Time in minutes :   3,90
The cost estimation below is based on Questel's
standard price list
                             Estimated cost :    7.47 USD
```

```
Cost estimated for the last database search :    7.47 USD
Estimated total session cost                :   31.51 USD

DWPX         - Time in minutes :   6,28
The cost estimation below is based on Questel's
standard price list
                             Estimated cost :   18.46 USD
Records displayed and billed    :      5
                             Estimated cost :    4.71 USD
Cost estimated for the last database search :   23.17 USD
Estimated total session cost                :   54.68 USD

Your session will be retained for 2 hours.

QUESTEL.ORBIT thanks you. Hope to hear from you again soon.
```